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NATA

Client:

LumCAT: 3-1701-N

Luminaire: 92.70.065.00+92.70.061.00

Report No: nt0100

Voltage(V): 33.9700

Test No: GC2020011018

Current(A): 0.6000

LampCAT: LUMINUS CXM-14-AC40

Power (W): 20.3900

Lamp flux(lm): 2436.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 0

Width(mm): 0

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1857.98, Efficiency(%): 76.27% , Luminous Efficacy(lm/W): 91.12

Central intensity(cd): 10176.610, Maximum intensity(cd): 10176.610

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=18.8

[C90/270]Total=18.8

Field angle(10%Imax): [C0/180]Total=37.2

[C90/270]Total=37.2

Maximum s/h(1/2): C0_180=0.32 C90_270=0.32

Maximum s/h(1/4): C0_180=0.31 C90_270=0.31

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 76.27%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.184%

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2020/1/10
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	10176.609	0.000	0	.000%	.000%
1.0	10121.766	9.712	9.712	.399%	.523%
2.0	9968.273	28.835	38.548	1.184%	2.075%
3.0	9657.633	46.939	85.486	1.927%	4.601%
4.0	9226.266	63.210	148.697	2.595%	8.003%
5.0	8685.211	77.054	225.751	3.163%	12.150%
6.0	7924.922	87.291	313.042	3.583%	16.849%
7.0	7140.305	93.510	406.551	3.839%	21.881%
8.0	6367.289	96.671	503.222	3.968%	27.084%
9.0	5491.477	96.109	599.331	3.945%	32.257%
10.0	4549.289	90.865	690.197	3.730%	37.148%
11.0	3765.023	83.077	773.274	3.410%	41.619%
12.0	3049.102	74.488	847.762	3.058%	45.628%
13.0	2313.422	63.640	911.401	2.612%	49.053%
14.0	1873.898	53.597	964.999	2.200%	51.938%
15.0	1563.188	47.186	1012.185	1.937%	54.478%
16.0	1320.427	42.253	1054.438	1.735%	56.752%
17.0	1178.023	38.908	1093.345	1.597%	58.846%
18.0	1067.583	37.025	1130.37	1.520%	60.839%
19.0	977.034	35.572	1165.943	1.460%	62.753%
20.0	902.700	34.404	1200.347	1.412%	64.605%
21.0	835.896	33.385	1233.731	1.370%	66.402%
22.0	769.015	32.251	1265.983	1.324%	68.138%
23.0	713.025	31.097	1297.08	1.277%	69.811%
24.0	654.377	29.896	1326.976	1.227%	71.421%
25.0	598.338	28.484	1355.46	1.169%	72.954%
26.0	554.646	27.216	1382.677	1.117%	74.418%
27.0	513.759	26.139	1408.815	1.073%	75.825%
28.0	470.053	24.908	1433.723	1.022%	77.166%
29.0	437.344	23.740	1457.464	.975%	78.444%
30.0	408.129	22.828	1480.291	.937%	79.672%
31.0	374.196	21.771	1502.062	.894%	80.844%
32.0	348.012	20.690	1522.753	.849%	81.958%
33.0	324.323	19.807	1542.56	.813%	83.024%
34.0	299.264	18.872	1561.431	.775%	84.039%
35.0	279.675	17.980	1579.411	.738%	85.007%
36.0	263.974	17.310	1596.721	.711%	85.939%
37.0	241.657	16.491	1613.212	.677%	86.826%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	226.659	15.632	1628.844	.642%	87.668%
39.0	211.598	14.959	1643.803	.614%	88.473%
40.0	196.488	14.233	1658.035	.584%	89.239%
41.0	183.888	13.545	1671.58	.556%	89.968%
42.0	170.241	12.866	1684.446	.528%	90.660%
43.0	153.984	12.010	1696.457	.493%	91.307%
44.0	141.750	11.162	1707.618	.458%	91.907%
45.0	129.818	10.437	1718.055	.428%	92.469%
46.0	116.093	9.617	1727.672	.395%	92.987%
47.0	106.348	8.847	1736.519	.363%	93.463%
48.0	97.573	8.244	1744.763	.338%	93.907%
49.0	88.453	7.639	1752.402	.314%	94.318%
50.0	80.571	7.047	1759.449	.289%	94.697%
51.0	73.934	6.537	1765.986	.268%	95.049%
52.0	66.825	6.040	1772.026	.248%	95.374%
53.0	60.504	5.539	1777.565	.227%	95.672%
54.0	54.710	5.078	1782.643	.208%	95.945%
55.0	49.416	4.648	1787.291	.191%	96.196%
56.0	45.084	4.270	1791.561	.175%	96.425%
57.0	41.112	3.941	1795.502	.162%	96.638%
58.0	37.491	3.635	1799.137	.149%	96.833%
59.0	34.608	3.371	1802.508	.138%	97.015%
60.0	31.908	3.142	1805.65	.129%	97.184%
61.0	29.278	2.920	1808.57	.120%	97.341%
62.0	27.457	2.734	1811.304	.112%	97.488%
63.0	26.002	2.600	1813.904	.107%	97.628%
64.0	24.680	2.487	1816.391	.102%	97.762%
65.0	23.759	2.397	1818.788	.098%	97.891%
66.0	22.915	2.329	1821.117	.096%	98.016%
67.0	22.015	2.259	1823.376	.093%	98.138%
68.0	21.157	2.187	1825.563	.090%	98.256%
69.0	20.405	2.120	1827.683	.087%	98.370%
70.0	19.624	2.056	1829.739	.084%	98.480%
71.0	18.921	1.992	1831.731	.082%	98.587%
72.0	18.246	1.933	1833.664	.079%	98.692%
73.0	17.571	1.873	1835.537	.077%	98.792%
74.0	16.980	1.816	1837.353	.075%	98.890%
75.0	16.348	1.761	1839.114	.072%	98.985%

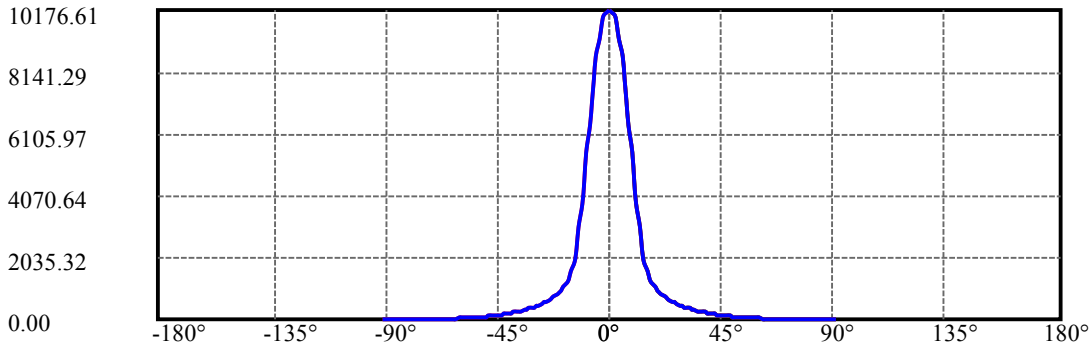
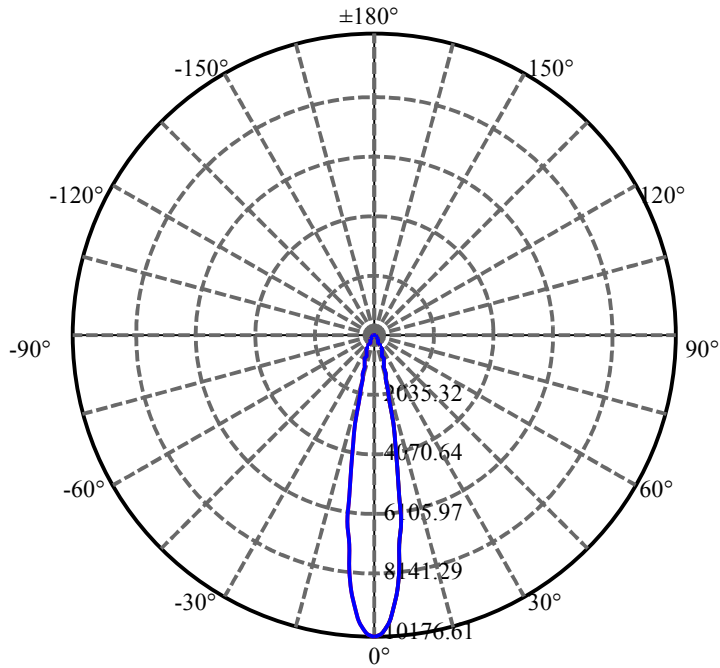
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	15.694	1.701	1840.815	.070%	99.076%
77.0	15.124	1.643	1842.458	.067%	99.165%
78.0	14.505	1.586	1844.044	.065%	99.250%
79.0	13.746	1.518	1845.562	.062%	99.332%
80.0	13.085	1.447	1847.009	.059%	99.410%
81.0	12.445	1.381	1848.389	.057%	99.484%
82.0	11.714	1.310	1849.699	.054%	99.555%
83.0	11.067	1.238	1850.938	.051%	99.621%
84.0	10.455	1.173	1852.11	.048%	99.684%
85.0	9.844	1.108	1853.218	.045%	99.744%
86.0	9.281	1.045	1854.264	.043%	99.800%
87.0	8.733	0.986	1855.249	.040%	99.853%
88.0	8.374	0.937	1856.187	.038%	99.904%
89.0	8.121	0.904	1857.091	.037%	99.952%
90.0	8.009	0.884	1857.975	.036%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1480.29	60.77%	79.67%
0-40	1658.04	68.06%	89.24%
0-60	1805.65	74.12%	97.18%
0-90	1857.09	76.24%	99.95%
0-120	1857.09	76.24%	99.95%
0-180	1857.98	76.27%	100.00%
60-90	54.58	2.24%	2.94%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-30.28	1486.38	61.02%	80.00%

ZONAL LUMEN SUMMARY

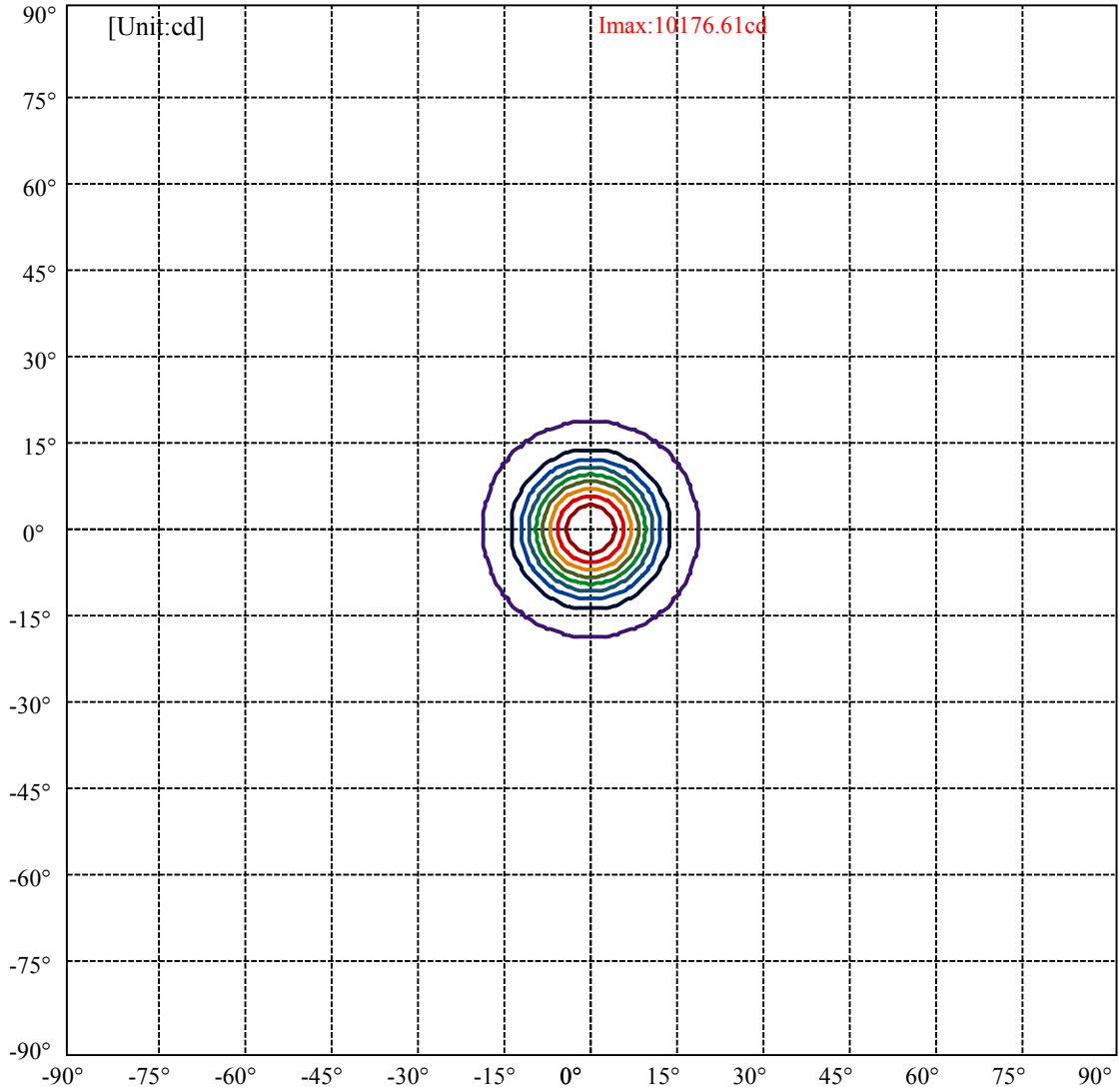
0-10	690.20
10-20	510.15
20-30	279.94
30-40	177.74
40-50	101.41
50-60	46.20
60-70	24.09
70-80	17.27
80-90	10.08
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



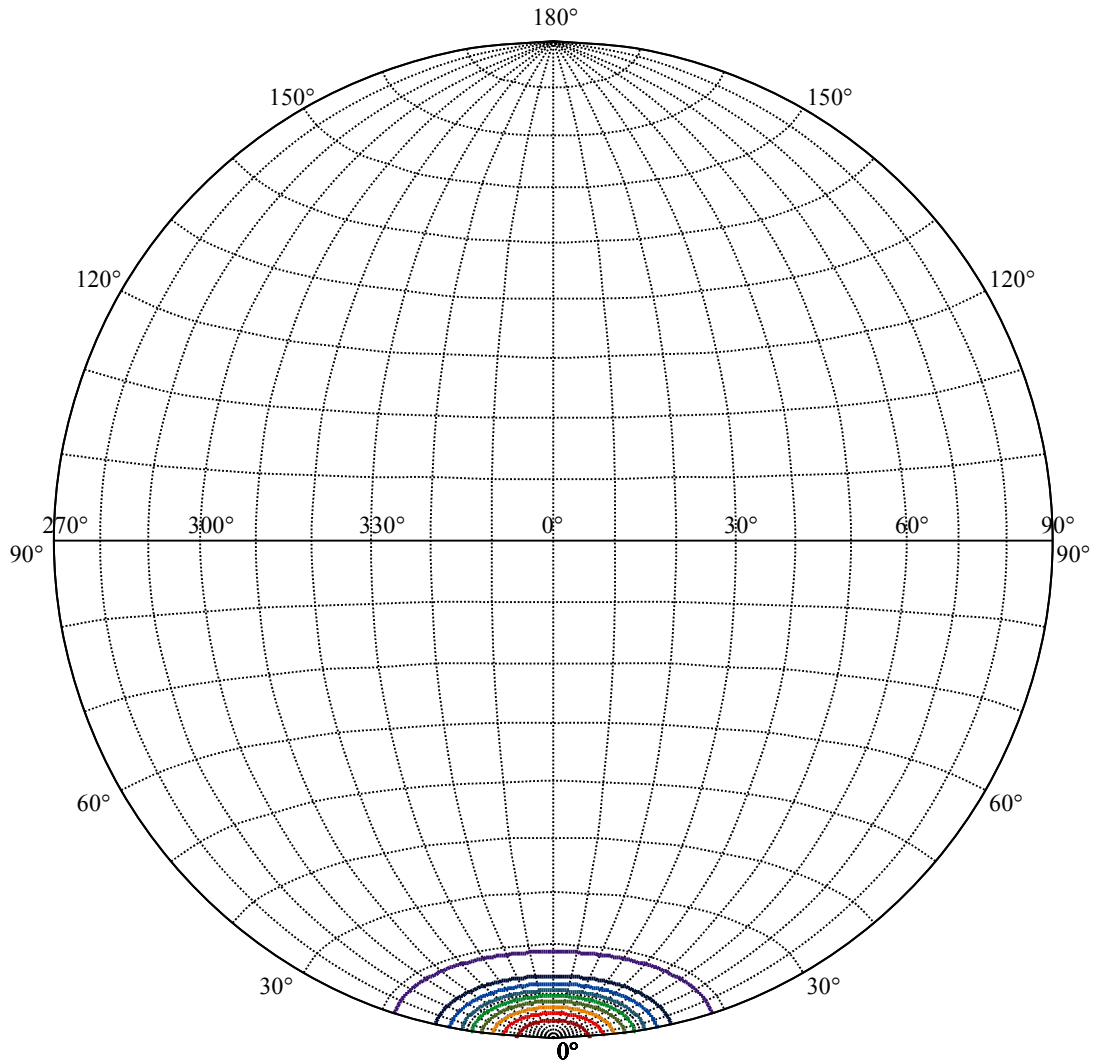
C0(Max): —————
C0/C180: —————
C90/C270: —————

Field angle(10%Imax):C0/180Left:18.6 Right:18.6
:C90/270Left:18.6 Right:18.6

Beam Angle(50%Imax):C0/180Left:9.4 Right:9.4
:C90/270Left:9.4 Right:9.4



(10%I _{max}) 1017.66	—
(20%I _{max}) 2035.32	—
(30%I _{max}) 3052.98	—
(40%I _{max}) 4070.64	—
(50%I _{max}) 5088.3	—
(60%I _{max}) 6105.97	—
(70%I _{max}) 7123.63	—
(80%I _{max}) 8141.29	—
(90%I _{max}) 9158.95	—



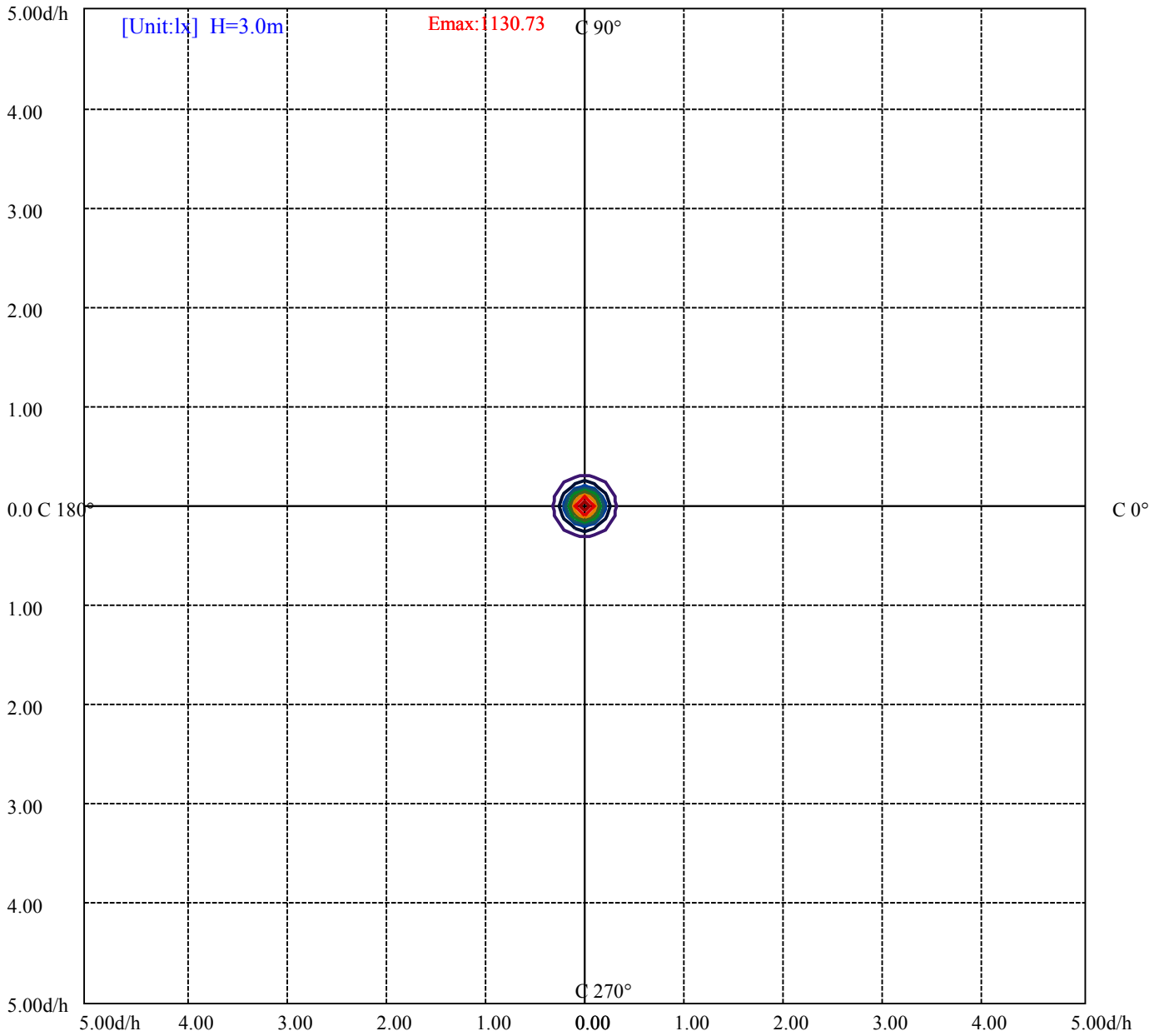
House

[Unit:cd]

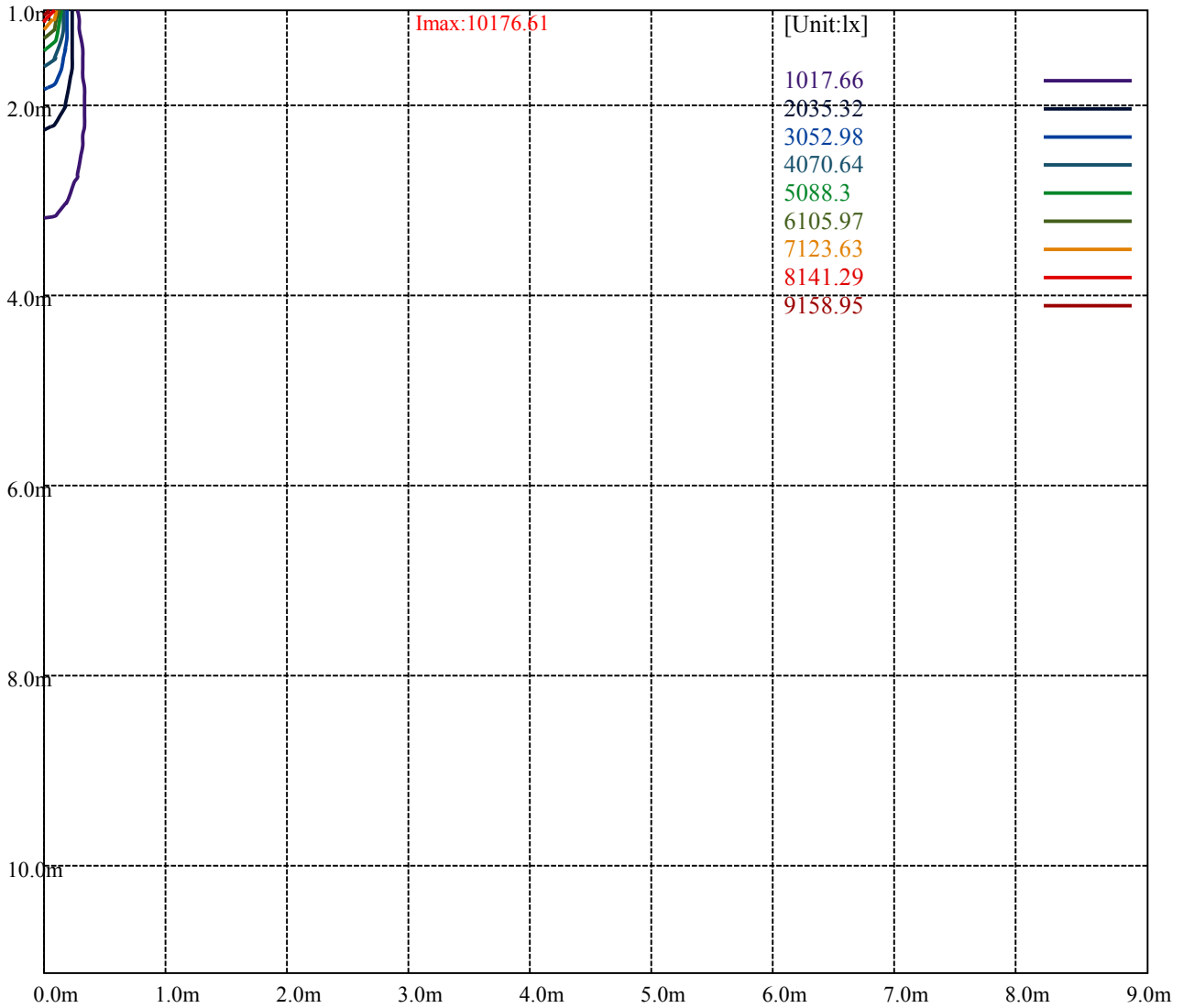
Road

Imax:10176.61

(10%Imax) 1017.66	—
(20%Imax) 2035.32	—
(30%Imax) 3052.98	—
(40%Imax) 4070.64	—
(50%Imax) 5088.3	—
(60%Imax) 6105.97	—
(70%Imax) 7123.63	—
(80%Imax) 8141.29	—
(90%Imax) 9158.95	—



(10%Emax) 113.0733	—
(20%Emax) 226.1467	—
(30%Emax) 339.22	—
(40%Emax) 452.2933	—
(50%Emax) 565.3666	—
(60%Emax) 678.44	—
(70%Emax) 791.5134	—
(80%Emax) 904.5867	—
(90%Emax) 1017.66	—



Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

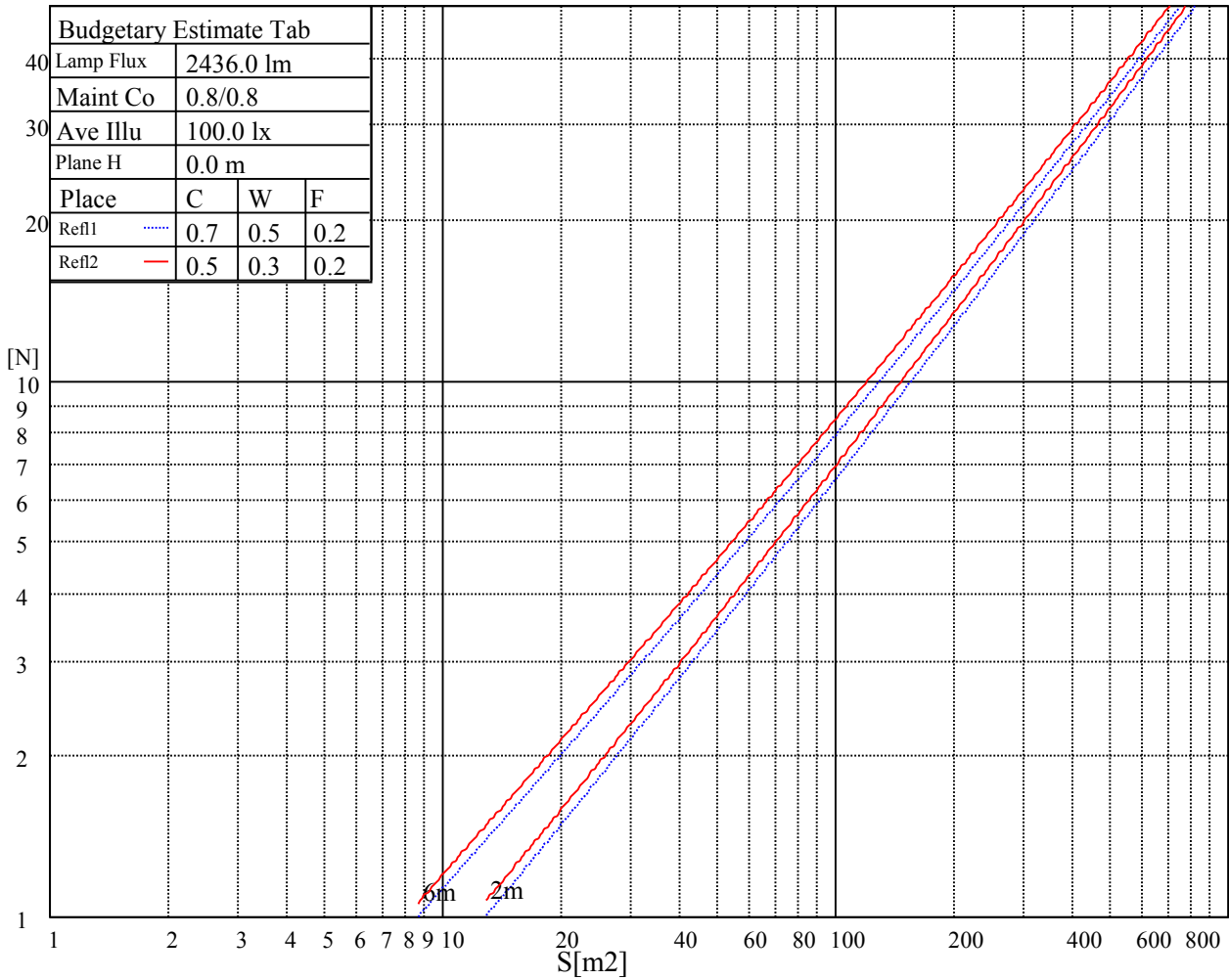
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

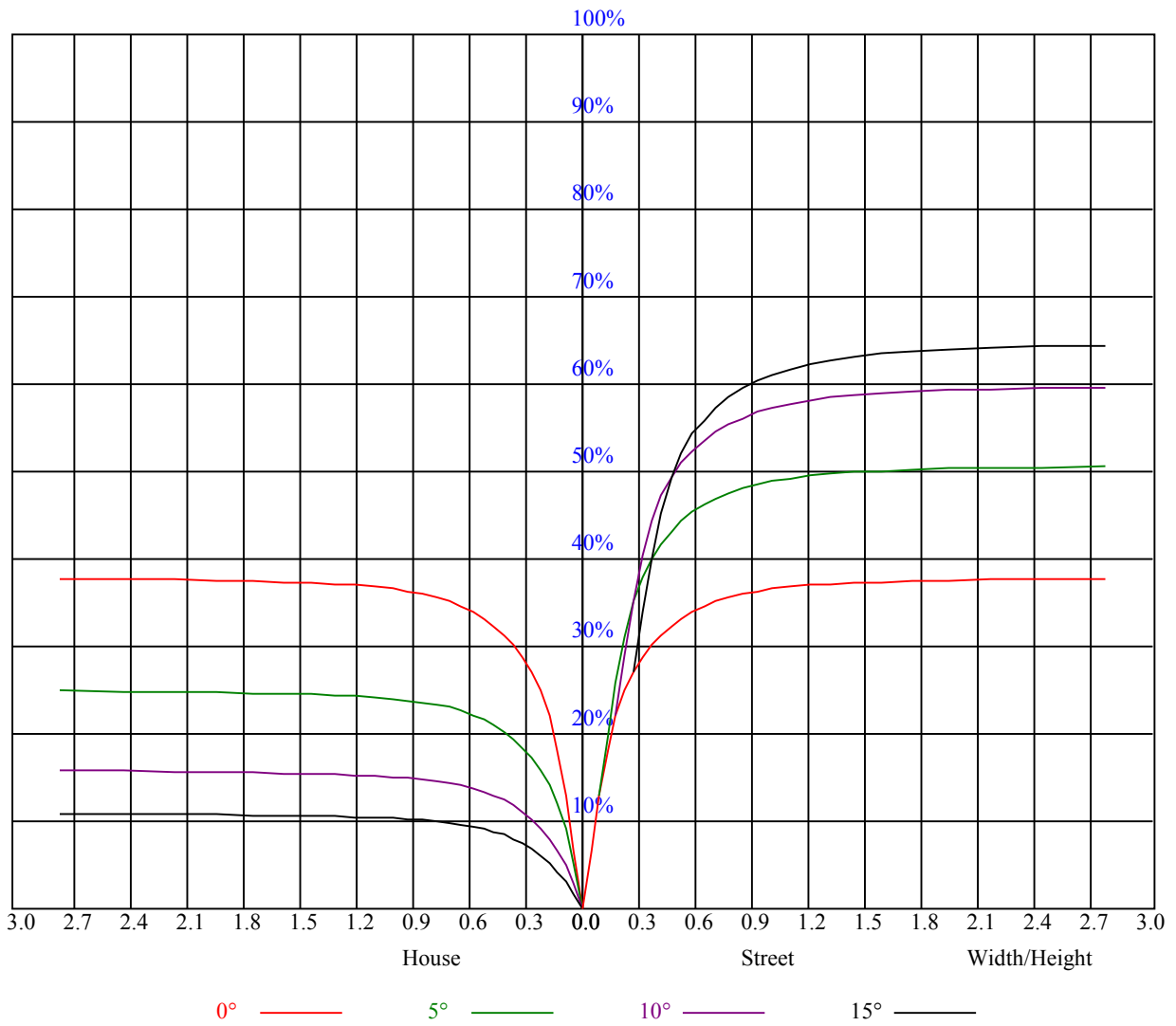
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

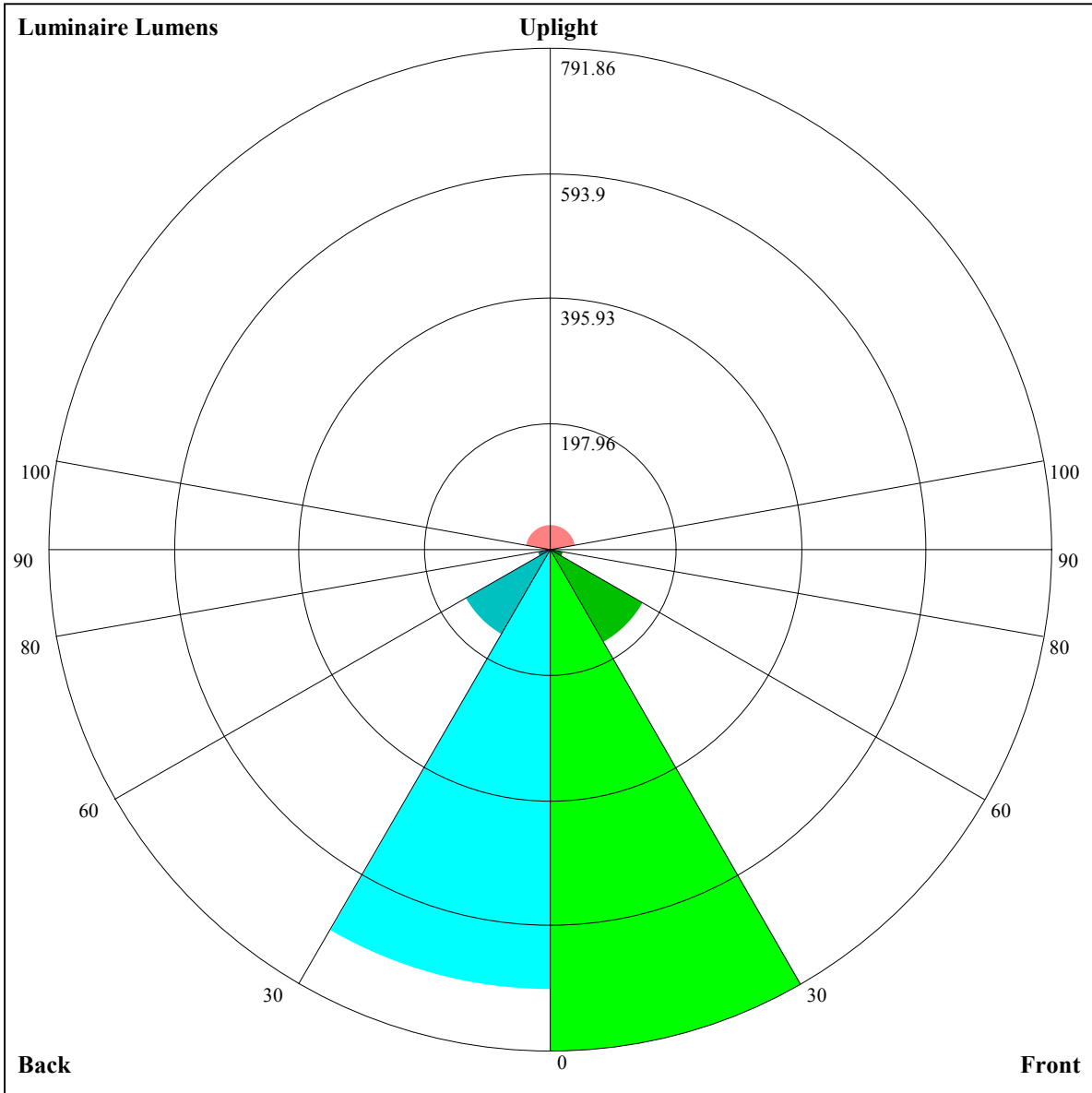
Luminance Limiting Curve





RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFICIENTS OF UTILIZATION RHOFC=20 CU															
0	0.91	0.91	0.91	0.89	0.89	0.89	0.85	0.85	0.85	0.81	0.81	0.81	0.78	0.78	0.78	0.76
1	0.85	0.83	0.82	0.83	0.82	0.80	0.80	0.79	0.78	0.77	0.77	0.76	0.75	0.74	0.73	0.72
2	0.80	0.77	0.75	0.79	0.76	0.74	0.76	0.74	0.73	0.74	0.72	0.71	0.72	0.71	0.70	0.68
3	0.76	0.73	0.70	0.75	0.72	0.69	0.73	0.70	0.68	0.71	0.69	0.67	0.69	0.68	0.66	0.65
4	0.72	0.69	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.68	0.66	0.64	0.67	0.65	0.63	0.62
5	0.69	0.65	0.62	0.68	0.65	0.62	0.67	0.64	0.62	0.66	0.63	0.61	0.65	0.62	0.61	0.60
6	0.66	0.62	0.60	0.65	0.62	0.59	0.64	0.61	0.59	0.63	0.61	0.59	0.62	0.60	0.58	0.57
7	0.64	0.60	0.57	0.63	0.60	0.57	0.62	0.59	0.57	0.61	0.59	0.56	0.61	0.58	0.56	0.55
8	0.61	0.58	0.55	0.61	0.57	0.55	0.60	0.57	0.55	0.59	0.57	0.55	0.59	0.56	0.54	0.53
9	0.59	0.56	0.53	0.59	0.55	0.53	0.58	0.55	0.53	0.58	0.55	0.53	0.57	0.55	0.53	0.52
10	0.57	0.54	0.52	0.57	0.54	0.51	0.57	0.53	0.51	0.56	0.53	0.51	0.56	0.53	0.51	0.50





Luminaire Lumens:

FL=791.86,FM=169.61,FH=21.26,FVH=5.64

BL=694.38,BM=156.53,BH=20.21,BVH=5.35

UL=8.74,UH=41.58

BUG Rating:B2-U2-G0

Intensity data(cd)

C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
0.0	10166.06	10225.13	10194.19	10051.88	9816.19	9361.13	8754.75	8105.63	7375.50
45.0	10175.06	10126.13	9980.44	9748.13	9330.19	8839.69	8155.13	7336.69	6582.94
90.0	10152.00	9970.88	9688.50	9200.81	8586.00	7930.13	7016.06	6231.94	5435.44
135.0	10213.88	10060.31	9767.81	9263.25	8686.13	8008.31	7057.13	6260.06	5472.00
180.0	10166.06	9967.50	9678.94	9169.88	8503.88	7781.06	6979.50	5925.94	5092.31
225.0	10173.94	10118.25	9963.00	9605.25	9167.63	8576.44	7683.19	6901.31	6092.44
270.0	10152.00	10230.19	10224.56	10094.63	9868.50	9525.94	8900.44	8256.38	7531.31
315.0	10213.88	10275.75	10248.75	10127.25	9851.63	9459.00	8853.19	8104.50	7356.38
360.0	10166.06	10225.13	10194.19	10051.88	9816.19	9361.13	8754.75	8105.63	7375.50
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	6383.25	5571.56	4764.38	3858.75	3001.50	2361.94	1833.75	1501.31	1324.13
45.0	5727.94	4835.81	4017.38	3339.00	2436.19	1959.19	1665.56	1400.06	1234.13
90.0	4597.31	3580.88	2858.63	2272.50	1762.31	1507.50	1331.44	1121.51	1059.53
135.0	4465.69	3644.44	2884.50	2272.50	1739.25	1483.88	1313.44	1168.88	1056.94
180.0	4260.38	3247.31	2540.81	2008.69	1613.25	1386.00	1243.69	1104.53	1028.25
225.0	5277.38	4231.69	3417.19	2684.81	1995.75	1650.94	1440.00	1265.63	1113.47
270.0	6648.19	5728.50	4900.50	4050.00	3035.25	2354.63	1860.19	1514.81	1316.25
315.0	6571.69	5554.13	4736.81	3906.56	2923.88	2287.13	1817.44	1486.69	1291.50
360.0	6383.25	5571.56	4764.38	3858.75	3001.50	2361.94	1833.75	1501.31	1324.13
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1182.38	1085.06	993.38	915.19	852.19	785.25	720.00	663.75	610.88
45.0	1127.81	1009.69	925.31	867.94	792.56	735.19	678.94	615.94	570.94
90.0	975.38	896.96	834.64	768.32	704.48	651.26	597.09	547.71	508.61
135.0	975.94	900.00	831.94	773.44	709.88	655.88	599.06	552.38	513.00
180.0	946.07	864.73	811.46	745.88	675.73	630.11	582.53	525.21	492.36
225.0	1032.08	947.36	882.96	815.34	749.81	693.34	633.71	580.95	540.00
270.0	1181.25	1064.81	973.69	906.75	839.81	782.44	717.75	655.31	605.25
315.0	1119.77	1047.66	968.23	894.32	827.66	770.74	705.94	645.47	596.14
360.0	1182.38	1085.06	993.38	915.19	852.19	785.25	720.00	663.75	610.88
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	552.94	512.44	475.88	442.69	405.00	377.44	349.31	324.00	303.75
45.0	529.88	484.88	452.81	424.13	387.00	363.94	339.75	312.75	289.13
90.0	472.84	431.83	401.63	372.09	337.39	315.28	295.43	273.15	256.78
135.0	478.13	439.31	410.63	384.75	353.81	328.50	307.13	286.31	271.86
180.0	457.71	422.16	389.42	362.36	335.03	310.56	291.04	270.73	254.25
225.0	502.54	458.83	427.73	399.04	369.68	342.23	318.04	293.63	271.86
270.0	564.75	508.50	472.50	443.25	401.06	371.81	345.38	315.56	293.06
315.0	551.31	502.48	468.17	436.73	404.61	374.34	348.53	317.98	296.72
360.0	552.94	512.44	475.88	442.69	405.00	377.44	349.31	324.00	303.75
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	284.63	262.46	244.35	231.13	214.37	201.83	189.73	173.19	159.36
45.0	284.06	249.64	232.82	215.49	200.98	189.11	173.53	158.51	145.80
90.0	241.71	225.06	213.92	200.64	186.24	173.93	160.93	143.33	132.64
135.0	248.68	232.48	217.86	202.44	188.78	174.71	159.41	144.23	131.63
180.0	237.15	221.91	209.03	196.48	180.90	166.89	153.51	137.36	125.49
225.0	252.06	232.48	216.45	200.70	186.75	175.11	161.10	145.46	133.09
270.0	285.75	252.79	236.64	220.39	205.82	193.73	180.51	165.77	153.39
315.0	277.76	256.44	242.21	225.51	208.07	195.81	183.21	164.03	152.61
360.0	284.63	262.46	244.35	231.13	214.37	201.83	189.73	173.19	159.36

Intensity data(cd)

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	146.64	131.23	119.93	109.46	97.82	90.06	83.03	75.54	68.40
45.0	133.48	119.08	108.56	99.28	90.28	82.29	75.66	68.57	61.71
90.0	121.16	107.16	99.28	91.35	83.14	75.54	69.08	62.04	56.31
135.0	120.04	107.49	98.89	91.07	82.86	75.09	68.34	61.03	54.51
180.0	114.64	104.74	94.33	87.08	80.21	72.17	65.87	59.57	53.16
225.0	121.33	108.28	98.94	91.01	82.91	75.38	69.24	61.76	56.76
270.0	141.30	127.13	116.55	106.82	95.63	87.69	80.55	73.35	66.60
315.0	139.95	123.64	114.30	104.51	94.78	86.34	79.71	72.73	66.60
360.0	146.64	131.23	119.93	109.46	97.82	90.06	83.03	75.54	68.40
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	62.21	55.91	50.29	46.01	41.85	38.70	35.38	32.40	30.09
45.0	56.08	50.51	46.24	42.02	38.31	35.38	32.46	29.81	27.79
90.0	50.68	46.01	42.30	38.59	35.16	32.34	29.93	27.28	25.82
135.0	49.61	44.89	41.23	37.58	34.37	31.78	29.31	27.17	25.82
180.0	47.76	43.76	39.83	36.84	33.81	31.11	28.97	27.00	25.71
225.0	50.74	45.73	41.91	38.19	34.82	32.23	29.98	27.45	25.88
270.0	60.69	54.73	49.95	45.28	41.18	38.03	34.82	31.84	29.42
315.0	59.91	53.78	48.94	44.38	40.44	37.29	34.43	31.28	29.14
360.0	62.21	55.91	50.29	46.01	41.85	38.70	35.38	32.40	30.09
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	27.90	26.16	25.20	24.30	23.29	22.44	21.66	20.76	19.97
45.0	26.21	24.98	24.02	23.18	22.28	21.38	20.64	19.86	19.13
90.0	24.86	23.79	22.89	22.05	21.15	20.36	19.63	18.84	18.17
135.0	24.86	23.79	22.95	22.16	21.26	20.42	19.74	19.01	18.34
180.0	24.75	23.91	22.84	22.05	21.32	20.48	19.63	18.90	18.28
225.0	24.81	23.68	22.89	22.11	21.15	20.42	19.74	18.90	18.34
270.0	27.28	25.48	24.58	23.68	22.73	21.83	21.09	20.31	19.52
315.0	27.34	25.65	24.69	23.79	22.95	21.94	21.09	20.42	19.63
360.0	27.90	26.16	25.20	24.30	23.29	22.44	21.66	20.76	19.97
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	19.29	18.56	18.00	17.33	16.65	16.14	15.53	14.85	14.18
45.0	18.45	17.66	17.04	16.43	15.69	15.19	14.57	13.73	13.05
90.0	17.49	16.88	16.26	15.58	14.96	14.29	13.61	12.83	12.21
135.0	17.72	17.04	16.48	15.81	15.13	14.46	13.84	12.99	12.38
180.0	17.61	17.04	16.37	15.81	15.13	14.46	13.78	13.11	12.32
225.0	17.72	16.99	16.48	15.86	15.24	14.74	14.12	13.33	12.71
270.0	18.84	18.17	17.61	16.99	16.37	15.86	15.30	14.57	13.95
315.0	18.84	18.23	17.61	16.99	16.37	15.86	15.30	14.57	13.89
360.0	19.29	18.56	18.00	17.33	16.65	16.14	15.53	14.85	14.18
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	13.44	12.66	11.98	11.36	10.69	10.13	9.45	8.94	8.44
45.0	12.43	11.76	11.08	10.46	9.84	9.28	8.72	8.27	8.04
90.0	11.59	10.86	10.29	9.73	9.17	8.66	8.21	7.99	7.93
135.0	11.70	10.97	10.41	9.79	9.23	8.66	8.21	8.04	7.99
180.0	11.70	11.03	10.35	9.79	9.17	8.66	8.21	8.04	8.04
225.0	12.09	11.31	10.74	10.18	9.62	9.06	8.49	8.16	7.93
270.0	13.33	12.54	11.81	11.14	10.46	9.84	9.23	8.72	8.27
315.0	13.28	12.60	11.87	11.19	10.58	9.96	9.34	8.83	8.33
360.0	13.44	12.66	11.98	11.36	10.69	10.13	9.45	8.94	8.44

Intensity data(cd)

C/γ(°)	90.0
0.0	8.16
45.0	7.93
90.0	7.93
135.0	7.99
180.0	8.04
225.0	7.88
270.0	8.04
315.0	8.10
360.0	8.16